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WAR FOOD ADMINISTRATION
EXTENSION SERVICE
Washington 25, D. C.

A
KODACHROME SLIDES - CEREAL DISEASES.

This set of 78 color slides on cereal diseases is the third series to be assembled and made available as an activity of the War Committee, American Phytopathological Society. The other series were "Vegetable Diseases," and "Fruit Diseases," both distributed in 1943. For these slides we are indebted to various plant pathologists and others as indicated in the list.

WHEAT

151. Covered smut, bunt. Four diseased, 2 healthy heads var. Leap.
(W. B. Combs 11)
152. Covered smut. Several smut balls and sound kernels, close up.
(W. B. Combs 12)
153. Loose smut. Four smutted, one healthy head. (R. S. Kirby, Pa. 1)
154. Stem rust. Eight stems showing red and black stages, greenhouse
1940. (R. E. Vaughan, Wis. 30)
155. Stem rust. Life cycle chart, spring, summer, fall, winter.
(E. & P.Q. 1)
156. Stem rust. Close up 6 stems durum showing red rust pustules.
Wilmot, S.Dak. 7/23/42. Photo by Kirby. (E. & P.Q. 5)
157. Stem rust. Close up portion of stem, red rust stage. Eaton, N.Y.
7/19/41. Photo by Kirby. (E. & P.Q. 6)
158. Stem rust. Black rust stage. Portions of 3 stems. Big Forks, Mont.
8/1/42. Photo by Kirby. (E. & P.Q. 9)
159. Stem rust. Two piles of wheat--plump grains from 100 heads of rust-
free wheat; shriveled grains from 100 heads of rusted wheat.
Photo by Kirby 1/27/40. (E. & P.Q. 10)
160. Stem rust. Close up grains and stem. Resistant Thatcher wheat left.
Susceptible Marquis wheat right. 11/15/39. (R. J. Haskell 507)
161. Stem rust. Portion of branch of common barberry showing aecial stage
on leaves. Also shows leaf, thorn and flower characters. Photo
by Kirby 5/24/41. (E. & P.Q. 2)
162. Stem rust. Close up small portion underside barberry leaf with
cluster cups, aecial stage. Photo by Kirby 7/8/41. Eaton, N.Y.
(E. & P.Q. 3)
163. Stem rust. Microscopic slide, stained red. Section through barberry
leaf and aecium showing spores and structure of aecium and leaf.
(Wis. 31)
164. Stem rust. Close up fruit clusters and foliage common barberry.
(Berberis vulgaris). Photo by Kirby, Tyrone, Pa., 10/10/40.
(E. & P.Q. 12)
165. Stem rust. Colored chart, "Barberry eradication reduces losses from
stem rust." Indicates life cycle and urges breaking cycle
by eradication of barberry. Photo by Kirby, January 1944.
Chart by E. & P.Q. (E. & P.Q. 14)

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Wheat, cont'd.

166. Leaf rust. Close up several rusted plants and leaves growing in field. (W. B. Combs 7)

167. Leaf rust. Close up small portions of two leaves showing red rust stage. Photo by Kirby, Berks Co., Pa. 6/15/42. (E. & P.Q. 15)

168-171 Leaf rust. Types of host reactions as used in physiologic race identification in Oklahoma. (Chester, Okla. 17, 16, 15, 14)

170 Close up of lesions on single leaves. 168.- Very susceptible "4".

169. - Susceptible "3". 170. - Resistant "2". 171. - Very resistant "1".

172. *Helminthosporium* blight. Natural infection in varying degrees of severity on 5 seedlings. (Wis. 29)

173. Seedling blight, largely *Helminthosporium*. Effects of seed treatment: Left, seedlings from 100 nontreated seeds. Right, seedlings from 100 N.I. Ceresan treated seeds. (M.B. Moore, Minn. 2)

174. Scab. Four heads showing affected spikelets. (R. S. Kirby, Pa. 4)

175. Scab. Close up of 6 diseased spikelets showing pink conidial stage of casual fungus. 7/10/40. (R. J. Haskell 546)

176. Scab. Four piles of wheat kernels from single scab-infected head— 30 healthy, 10 scabby, showing pink and white discolorations; 10 partially scabby and 10 shriveled. Var. Leap. Bethesda, Md. 7/10/40. (R. J. Haskell 547)

177. Scab. Kernels from 3 heads of wheat separated and placed in original position along rachis. Left-healthy, center- partially scabby, right- scabby. Var. Leap. Bethesda, Md. 7/10/40. (R. J. Haskell 548)

178. Scab. Affected heads and kernels. Also portion of old affected corn stalk. Photo by Kirby in Southwest Minnesota 7/23/42. (E. & P.Q. 16)

179. Nematode galls. Close up wheat sample showing several nematode galls in comparison with normal kernels. 10/38 (R. J. Haskell 161)

228. Speckled leaf blotch (*Septoria tritici*) Lower portions of plants in field showing dying and blotching of leaves. (Hurley Fellows, Kansas 1)

OATS

180. Blast or sterility. Var. #170. Single panicle. Cornell Univ. 7/11/40. Photo by Fisher. (M. F. Barrus, N.Y. 3)

181. Effect of treatment with N.I. Ceresan. Two petri dishes each containing 10 oat seed on nutrient medium. Left, treated with N.I. Ceresan. Right; untreated, each kernel shows growth of mold. (Wis. 27)

182. Smuts. Left, healthy head. Center, two heads loose smut. Right, two heads covered smut. (C. C. Allison, Ohio 4.39)

183. Stem rust. Portions of 5 stems, red rust stage. Photo by Kirby, La Raysville, Pa., 7/24/39. (E. & P.Q. 4)

184. Stem rust. Close up portion oat field near barberry bush showing spread from barberry to grain. Photo by Kirby, La Raysville, Pa. 7/24/39. (E. & P.Q. 7)

Oats cont'd.

185. Crown rust. Portions of two oat leaves, one showing red rust stage, the other showing both red and black stages. Photo by Kriby, Erie, Pa. 8/14/42. (E. & P.Q. 15)

186. Crown rust. Flecking on portion of leaf, showing Violand and Bend reaction. (Wis. 24)

187. Crown rust. Aecial stage on cluster of Rhamnus leaves. (Wis. 23)

BARLEY

188. Loose smut. Two smutted heads--one healthy head greenhouse 1940. (R. E. Vaughan, Wis. 2)

189. Covered and loose smuts. Three heads of each. Greenhouse 1940. (R. E. Vaughan, Wis. 1)

190. Leaf rust. Portions of five leaves, four with red rust stage, one healthy. (Wis. 8)

191. Powdery mildew. Two rows of susceptible barley compared with one row of a resistant variety. (Wis. 12)

192. Powdery mildew. Portions of four leaves, 3 susceptible varieties and one resistant. (Wis. 13)

193. Scab. Portions of two scabbed heads. Close up. 1940. (R. E. Vaughan, Wis. 5)

194. Scab. Scabbed (blighted) kernels, affected with Fusarium. Ohio. 6/27/40. (R. J. Haskell 551)

195. Bacterial blight (P. translucens). Four affected leaves and head. (Wis. 19)

196. Helminthosporium blight, seedling blight, natural infection. Six barley seedlings affected in varying degrees. (Wis. 18)

197. "Bights." Three petri dishes with barley kernels giving rise to growths of Helminthosporium, Gibberella and Fusarium. (Wis. 3)

198. Seedling blight, predominantly Helminthosporium. Shows benefit of seed treatment. Left, seedlings from 50 nontreated seeds. Right, seedlings from 50 N.I. Ceresan treated seeds 12/42. (M. B. Moore, Minn. 4)

199. Seedling blight. Flat of barley seedlings treated with hot water at various temperatures: Row 1, untreated check, 95 percent germination; Row 2, 53° C., 94 percent germination; Row 3, 54° C. 87 percent germination; Row 4, 55° C., percent germination; Row 5, 56° C., 56 percent germination; Row 6, 57° C., 9 percent germination. (Wis. 14)

RYE

200. Ergot. Four heads showing sclerotia 1/2/41. (R. E. Vaughan, Wis. 20)

201. Ergot. Close up grain sample showing ergot bodies. This Minnesota sample was from a lot of 144 bushels one third of which was ergot, worth \$1.00 per pound. (R. J. Haskell 74)

CORN

202. Smut. On stalk. Amherst, Mass. 7/24/39. (R. J. Haskell 349)
203. Smut. Smutted ear. University Farm, Fayetteville, Ark. 8/41 (V. H. Young, Ark. 20)
204. Rust. Portions of two leaves close up. (C. C. Allison, Ohio 4.7)
205. Helminthosporium blight (H. turcicum). Lesions on 3 leaves. 9/2/42 (R. S. Kirby, Pa. 7)
206. Ear rot (Gibberella). Rot of ear and husk. (J. J. Christensen, Minn. 104)
207. Gibberella. Perithecia on old stalk. Maryland 7/10/40. (R. J. Haskell 677)
208. Gibberella. Close up of small portion of old corn stalk showing individual perithecia. Maryland 7/10/40. (R. J. Haskell 550)
209. Ear rot (Diplodia). Diseased and healthy ears yellow dent corn. (J. J. Christensen, Minn. 101)
210. Fusarium moniliforme on two ears yellow dent. (R. S. Kirby, Pa. 6)
211. Charcoal rot. Close up portion of stalk showing shredded condition. (C. C. Allison, Ohio 4.10)
212. Crazy top, cause undetermined. (M. B. Moore, Minn. 7)

SORGHUM

213. Covered kernel smut (S. sorghi). Single smutted head. Fayetteville, Ark. 8/43. (V. H. Young, Ark. 35)
214. Milo disease (Pythium). Affected darso plants in foreground and at left. Healthy plant left rear. Stillwater, Okla. 7/40. (K. S. Chester, Okla. 7)
215. Milo disease (Pythium). Lower stalk and roots of single diseased darso plant. Shows reddening of base. Stillwater, Okla. 1941. (K. S. Chester, Okla. 6)
216. Charcoal rot (Macrophomina). Showing lodging of susceptible varieties. Resistant variety at left. Woodward, Okla. 10/2/40 (K. S. Chester, Okla. 9)
217. Charcoal rot. Left, head from healthy kafir plant. Right, head from diseased kafir plant. (K. S. Chester, Okla. 8)
218. Charcoal rot. Base of stalk showing sclerotia and maceration of pith. (K. S. Chester, Okla. 11)

FLAX

219. Rust. Close up of red rust stage on two leaves and one petiole. Red Wing var. 8/42. (J. J. Christensen, Minn. 107)
220. Rust. Close up rust lesions tetrial stage on flax stems. Red Wing var. 8/42. (J. J. Christensen, Minn. 106)
221. Pasmo. On stems of plants in field. (J. J. Christensen, Minn. 105)
220. Pasmo. On eight stems. Shows character of lesions. 11/6/39. (R. J. Haskell 461)

Flax, cont'd

223. Pasmo. Three stems. Shows black fruiting of causal fungus (*Phlycteana*) 11/6/39. (R. J. Haskell 462)
224. Diseased seed. Close up of four seeds. (J. J. Christensen, Minn. 109)
225. Cracked seed. Close up of four seeds showing types of injury and cracking. (J. J. Christensen, Minn. 108)

BROMHUS Sp.

226. Scald (*Rhynchosporium*). Similar to the disease of barley. Lesions on parts of four leaves. (Wis. 17)

SOYBEAN

227. Bacterial pustule (*P. phaseoli* var. *sojense*). Single leaf showing spots. 9/43 (K. S. Chester, Okla. 21)
228. See under Wheat.

METHOD OF ORDERING

Arrangements have been continued with the Eastman Kodak Stores, Inc. Washington, D. C., to supply duplicates from this set of slides in about the same way and at the same price as heretofore.

It has been decided to put in about three group or pooled duplicating orders. The first will be about December 1, if enough orders are received by that time as a result of circulation of this list to warrant it. The second will be about January 15, 1945, and the third about March 1, 1945. Average time to get duplicates at present is 4 to 6 weeks.

The Extension Service will purchase a few duplicate sets and start them circulating among the plant pathology departments of the several States. This is to permit those who wish to see the slides before ordering to do so. The price is 21 cents a slide.

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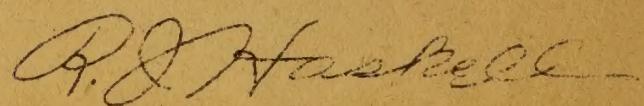
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R. J. Haskell
Extension Plant Pathologist